Information interventions for orienting patients and their carers to cancer care facilities (Review)

Chan RJ, Webster J, Marquart L

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[Intervention Review]

Information interventions for orienting patients and their carers to cancer care facilities

Raymond J Chan[1,4,5], Joan Webster[2,5,6], Louise Marquart[3]

[1]Cancer Care Services, Royal Brisbane and Women's Hospital, Brisbane, Australia. [2]Centre for Clinical Nursing, Royal Brisbane and Women's Hospital, Brisbane, Australia. [3]Statistics Unit, Queensland Institute of Medical Research, Brisbane, Australia. [4]Research Centre for Clinical Practice Innovation, Griffith University, Nathan, Australia. [5]School of Nursing & Midwifery, University of Queensland, Brisbane, Australia. [6]NHMRC Centre of Research Excellence in Nursing, Griffith University, Brisbane, Australia

Contact address: Raymond J Chan, raychan.rbwh@gmail.com.

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ABSTRACT

Background

Cancer patients experience distress and anxiety related to their diagnosis, treatment and the unfamiliar cancer centre. Strategies with the aim of orienting patients to a cancer care facility may improve patient outcomes. Although meeting patients' information needs at different stages is important, there is little agreement about the type of information and the timing for information to be given. Orientation interventions aim to address information needs at the start of a person's experience with a cancer care facility. The extent of any benefit of these interventions is unknown.

Objectives

To assess the effects of information interventions which orient patients and their carers/family to a cancer care facility, and to the services available in the facility.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 2); MEDLINE (OvidSP) (1966 to Jun 2011), EMBASE (Ovid SP) (1966 to Jun 2011), CINAHL (EBSCO) (1982 to Jun 2011), PsycINFO (OvidSP) (1966 to Jun 2011), review articles and reference lists of relevant articles. We contacted principal investigators and experts in the field.

Selection criteria

Randomised controlled trials (RCTs), cluster RCTs and quasi-RCTs evaluating the effects of information interventions that orient patients and their carers/family to a cancer care facility.

Data collection and analysis

Results of searches were reviewed against the pre-determined criteria for inclusion by two review authors. The primary outcomes were knowledge and understanding; health status and wellbeing, evaluation of care, and harms. Secondary outcomes were communication, skills acquisition, behavioural outcomes, service delivery, and health professional outcomes. We pooled results of RCTs using mean differences (MD) and 95% confidence intervals (CI).

Main results

We included four RCTs involving 610 participants. All four trials aimed to investigate the effects of orientation programs for cancer patients to a cancer facility. There was high risk of bias across studies. Findings from two of the RCTs demonstrated significant benefits of the orientation intervention in relation to levels of distress (mean difference (MD) -8.96 (95% confidence interval (CI) -11.79 to -6.13), but non-significant benefits in relation to state anxiety levels (MD -9.77 (95% CI -24.96 to 5.41). Other outcomes for participants were generally positive (e.g. more knowledgeable about the cancer centre and cancer therapy, better coping abilities). No harms or adverse effects were measured or reported by any of the included studies. There were insufficient data on the other outcomes of interest.

Authors' conclusions

This review has demonstrated the feasibility and some potential benefits of orientation interventions. There was a low level of evidence suggesting that orientation interventions can reduce distress in patients. However, most of the other outcomes remain inconclusive (patient knowledge recall/ satisfaction). The majority of studies were subject to high risk of bias, and were likely to be insufficiently powered. Further well conducted and powered RCTs are required to provide evidence for determining the most appropriate intensity, nature, mode and resources for such interventions. Patient and carer-focused outcomes should be included.

PLAIN LANGUAGE SUMMARY

Interventions for orienting patients and their carers to cancer care facilities

Patients who are new to a cancer care facility and cancer treatment are often stressed and anxious due to their diagnosis of cancer, uncertainties about treatment, needle phobias and meeting new care providers. This review focuses on the effects of information programs which provide information specifically related to the facility and the services available to patients, their families and care givers. A broad search of published reports located only four studies with 610 participants which met the criteria for inclusion in this review. There was a low level of evidence suggesting that such interventions can reduce distress in patients. The effects of such intervention on patient/carer satisfaction, knowledge and recall were not sufficiently evaluated or reported by the included trials. Although the studies generally reported positive outcomes for participants (e.g. more knowledgeable about the cancer centre and cancer therapy, better coping abilities), the studies generally were of poor quality and did not have a sufficient number of participants to eliminate the possibility of bias.

SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

Information interventions for orientation to cancer care facilities for patients and carers

Patient or population: patients and carers
Settings: cancer care centres
Intervention: Information interventions for orientation to cancer care facilities

Outcomes	Effects of Information interventions for orientation to cancer care facilities	No of Participants (studies)	Quality of the evidence (GRADE)
Knowledge and understanding of cancer/treatment Patients and relatives	One study found that patient reported knowledge of cancer/ chemotherapy was significantly better following an orientation program. Another study found non significant reduction in the knowledge of radiation therapy scores of patients and relatives following an orientation program	156 (2 studies)	⊕○○○ **very low**[1,2]
Trait anxiety STAI (T). Scale from: 0 to 60. Patients	The mean trait anxiety in the intervention groups was **4.7 lower** (8.37 to 1.03 lower)	110 (1 study)	⊕⊕○○ **low**[1,3]
State anxiety STAI-S. Scale from: 0 to 60. Patients	The mean state anxiety in the intervention groups was **9.77 lower** (24.96 lower to 5.41 higher)	188 (2 studies)	⊕⊕○○ **low**[1,4]
Distress POMS-TMDS (unclear range of scores) Patients	The mean distress in the intervention groups was **8.96 lower** (11.79 to 6.13 lower)	188 (2 studies)	⊕⊕○○ **low**[5]
Depression BSI Patients	In one study, the mean depression in the intervention groups was **0.4 lower** (2.95 lower to 2.15 higher). Two other studies reported positive benefits in depressive symptoms which were significant	304 (3 studies)	⊕⊕○○ **low**[1,3]
Satisfaction by patients and relatives	Patients reported significant improvement in satisfaction, however for relatives there was no significant effect	85 (1 study)	⊕⊕○○ **low**[1,2]

Harms or adverse events - not reported	No studies measured harms and no studies reported adverse events	-	-

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: Confidence interval;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] Few participants.
[2] Allocation concealment was unclear, blinding of intervention not possible and of outcome assessment unclear, and the numbers of participants analysed were not reported.
[3] Blinding of intervention not possible in study.
[4] There was high heterogeneity (I^2 = 92%). The heterogeneity might be due to the different assessment time points and the different treatments these newly registered patients were about to receive (chemotherapy vs. radiation therapy)
[5] Both trials had relatively few patients. There were also potential skewness in data as reported by trial authors, particularly in the Hoff 2005 trial.

BACKGROUND

Description of the condition

Approximately 24.6 million people experienced cancer around the world in 2002 (WHO 2005). According to the World Health Organisation (WHO), the number of new cancer cases is projected to increase from 10.9 million per year in 2002, to 16 million per year by 2020 (WHO 2005). Around one third of all cancer patients experience prolonged psychological distress and anxiety levels that may contribute to ongoing adjustment difficulties, and interfere with treatment adherence (Sellick 2007). Further, the psychological distress affects not only cancer patients, but also their partners, families and carers (Nijboer 2000).

Description of the intervention

There is consensus that information needs exist across the continuum of cancer care for patients and their family/carers (Rees 2000; Rutten 2005; Rutten 2006). However, we know little about the best timing for providing specific information. The first visit of a cancer patient to the oncology centre can be especially distressing (Mohide 1996). Factors contributing to this anxiety and distress may include recent cancer diagnosis, uncertainty about treatment, needle phobias, concerns about treatment length, and unfamiliarity with the environment and care providers (Carelle 2002). It has been shown that information provision can reduce anxiety and mood disturbances in cancer patients (Mills 1999).
While much attention has focused on preparing cancer patients for threatening medical treatment such as chemotherapy and radiotherapy (Dunn 2004; Schofield 2008), information regarding the actual facility and supportive services available can easily be left out of structured information-giving interventions. Therefore, the intervention under consideration in this review is any program or strategy that orients patients to a cancer care facility; that is, any intervention aiming to familiarise patients and their carers by giving them information about the cancer care facilities and services available to them therein (e.g. opening hours, role of the healthcare team).
Cancer patients may be receiving treatment in various settings

other than a specialised cancer centre. For example, cancer patients can receive treatment in a general medical centre without a specialised cancer department due to diverse resources available in various regions (Borras 2001). Information may be delivered using strategies such as audiovisual aids, written information, telephone help lines and face-to-face teaching (McPherson 2001). Moreover, there has also been an increasing awareness of the different needs among cancer patients who have varying levels of health literacy (ability to understand health materials) and diverse cultural backgrounds (Wilson 2000). Although different information needs exist, orientation interventions aim to provide generic information that is needed by all cancer patients during their early encounters with a cancer care facility.

How the intervention might work

Providing information may reduce distress by enhancing patients' sense of control. An enhanced sense of control, in turn, relieves anxiety and enhances management of illness (Chelf 2001). Specifically, evidence has suggested that providing cancer and surgical patients with information about the procedure they are about to undergo can significantly reduce their emotional distress and improve their psychological and physical recovery (Jacobsen 2008; Sjöling 2003). Other benefits related to the provision of information for cancer patients may include increased patient satisfaction (Loiselle 2009); and improved communication with family members (Rutten 2006).

Why it is important to do this review

Information is important for cancer patients and their family/carers throughout the continuum of cancer care. Although the benefits of information have been emphasised, patients and family members often report that their information needs are not sufficiently met (Champman 2003; Rees 2000). Orientation programs aim to address information needs at the start of a person's dealings with a cancer care facility. These programs may consume considerable resources - particularly in large cancer facilities where there may be hundreds of new patients per year - but the extent of any benefit is unknown. Indeed, it is possible that too much information may be undesirable, and not useful to new cancer patients (Dubois 2008). We also acknowledge that this review is narrowly focused as we are considering the intervention at a particular time point (before the first cancer treatment). However, meeting information needs at different stages is important in cancer care.

Relationship to other relevant reviews

Rodin and colleagues conducted a systematic review on the effects of treatment for depression in cancer (Rodin 2007). The review focused on depression as an outcome; orientation programs were not the specific subject of the review. The authors found that an orientation program reduced depression, but they did not assess any of the other outcomes of interest in the current review.

A Cochrane review conducted by Ranmal and colleagues investigated the effects of interventions for improving communication with children and adolescents about their cancer (Ranmal 2008). This review reported that specific information-giving programs, support before and during particular procedures, and school reintegration programs may benefit children and adolescents with cancer. This review provides information specific to children and adolescents, who are not included in this current review.

Another Cochrane review conducted by Moore and colleagues focused on interventions for improving communication skills training for cancer care professionals working with patients, their families and/or carers (Moore 2004). This review suggested that training programmes appeared to be effective in improving some areas of cancer care professionals' communication skills. Communication skills of healthcare processionals are not covered in this current review.

OBJECTIVES

To assess the effects of information interventions which orient patients and their carers/family to a cancer care facility and to the services available in the facility.

METHODS

Criteria for considering studies for this review

Types of studies

We included randomised controlled trials (RCTs), cluster RCTs and quasi-RCTs, in which the effect of an orientation intervention could be compared with a control group which received usual care, or with trials comparing one orientation intervention with another orientation intervention.

Types of participants

Participants were new oncology patients and carers who received an orientation intervention, which included information and education about the facility or services where they received care. The interventions were given to patients who were about to receive treatment or care in a cancer centre, or a cancer department of a general medical facility. This review only considered adults (over 18 years old) due to the different nature of information needs in paediatric patient populations. Participants could have any type

of cancer at any stage, and be scheduled to receive inpatient or outpatient treatment.

Types of interventions

Any information intervention with the primary goal of orienting patients and their carers to a cancer care facility or services. The intervention content had to include information about the care facility and services available in the facility (such as information about the healthcare team) as the core component of the intervention. The intervention could be delivered by healthcare professionals, administrative staff, volunteers or a combination. It could be delivered in any mode or a combination of modes, including:

- individual face to face;
- group intervention (including family-based interventions);
- telephone;
- video or audio materials;
- computer based/ technology based (e.g. internet);
- written materials.

The intervention could be a single intervention with the primary goal of orientation, or part of a complex intervention. If part of a complex intervention, it must have been possible to separately identify the effects of the orientation intervention. The orientation intervention could be compared to usual care or compare different modes and intensities of the intervention. Intensities may be measured by duration of the intervention or number of components involved in the intervention.
Based on the nature of the orientation, we excluded interventions which were delivered after the first cancer treatment had commenced. This was to avoid the inclusion of educational interventions during the course of treatment. The intervention may have been presented in any setting, for instance in hospital or at home.

Types of outcome measures

We sought data on outcomes in the following categories:

Primary outcomes

Consumer-oriented outcomes:

- Knowledge and understanding (e.g. knowledge acquisition; retention of information; ability to recall information);
- Health status and wellbeing (e.g. physical or psychological health, coping or quality of life, measured by any instrument used by the trial investigator);
- Evaluation of care (e.g. satisfaction of patients and carers measured by any instrument used by the trial investigator);
- Harms (any adverse effects caused in the patients)

Secondary outcomes

Consumer-oriented outcomes:

- Communication e.g. improved communication or relationship with provider;
- Skills acquisition e.g. self-care skills;
- Behavioural outcomes e.g. adherence to visits/ adherence to treatment.

Service delivery oriented outcomes:

- Service delivery level e.g. cost of orientation interventions, service use;
- Health professional outcomes e.g. satisfaction.

We extracted outcome data irrespective of whether it was collected with a validated tool.

Search methods for identification of studies

Electronic searches

We searched:

- Cochrane Central Register of Controlled Trials (CENTRAL), *The Cochrane Library* (Issue 2, 2011)
- MEDLINE Ovid SP (1966 to 23/06/2011),
- EMBASE Ovid SP (1988 to 23/06/2011),
- CINAHL EBSCO (1982 to 23/06/2011),
- PsycINFO Ovid SP (1967 to 23/06/2011).

The search strategies were developed using keywords and medical subject headings under existing database organizational schemes. The strategies for CENTRAL, MEDLINE, EMBASE, CINAHL and PsycINFO are respectively presented in Appendix 1, Appendix 2, Appendix 3, Appendix 4 and Appendix 5.
There was no restriction on language. Relevant foreign language abstracts were to have been initially translated for the application of the inclusion and exclusion criteria, and where necessary the methods, results and discussion sections would have been translated for inclusion in the review. However, no such abstracts were found.

Searching other resources

We searched the reference lists of any relevant studies and reviews. We also scanned contents pages of relevant journals for articles about interventions which orient patients to cancer care facilities, as well as abstracts from relevant conference proceedings. The relevant journals included *Patient Education and Counseling*, *Psycho-*

Oncology, *Oncology Nursing Forum*, and *Cancer Nursing*. We also contacted experts in the field and authors of included studies for advice about other potentially relevant studies.

We searched the ProQuest Dissertations and Theses database for grey literature. We searched databases in TrialsCentral (www.trialscentral.org), the WHO Clinical Trial Search Portal (www.who.int/trialsearch) and Current Controlled Trials (www.controlled-trials.com) to identify ongoing or recently completed studies. We planned, if applicable, to present relevant ongoing studies in a table in the review.

Data collection and analysis

Selection of studies

Two review authors (RC, JW) pre-screened all search results (titles and abstracts) for possible inclusion, and those selected by either or both authors (RC, JW) were subject to full-text assessment. Two review authors (RC, JW) independently assessed the selected articles for inclusion. We (RC, JW) resolved any discrepancies by consensus. We (RC, JW) listed studies that were excluded after full-text assessment in the table Characteristics of excluded studies, giving reasons for exclusion.

Data extraction and management

We developed a data extraction form based on the Cochrane Consumers and Communication Review Group's template (see Appendix 6). Two authors (RC, JW) independently extracted data using the data extraction form. Any discrepancies, errors or inconsistencies were resolved by consensus between the two authors.

Assessment of risk of bias in included studies

We assessed and reported on the risk of bias of included studies in accordance with the guidelines in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2008), which recommends the explicit reporting of the following individual domains:

- Sequence generation;
- Allocation concealment;
- Blinding of participants, personnel and outcome assessors (assessed for each main outcome or class of outcome);
- Incomplete outcome data (assessed for each main outcome or class of outcome);
- Selective outcome reporting;
- Other sources of bias.

This led to an overall assessment of the risk of bias of the included studies (Ryan 2007). We assessed each of the risk of bias items as 'low risk' indicating a low risk of bias, 'high risk' (a high risk of bias), and 'unclear risk' (risk of bias is unclear) based on the trial reports and/or additional information provided by trial authors. We also examined and reported the following:

- Validation and reliability of outcome measures;
- Whether the study obtained ethics committee approval and ensured informed consent for participation;
- Use of standardised protocols for information delivery. We checked for consistency of the delivery of interventions where possible.

Two review authors (RC, JW) independently assessed the risk of bias in included studies, with any disagreements resolved by discussion and consensus. We present risk of bias tables for each included study at Characteristics of included studies. We contacted study authors for additional information about the study methods as necessary. We incorporated the results of the risk of bias assessment into the review through narrative description and commentary about each of the items mentioned.

Measures of treatment effect

For continuous outcomes, we reported the mean difference (MD).

Assessment of heterogeneity

Heterogeneity was tested using the Chi^2 statistic and any heterogeneity was further quantified with the I^2 statistic (which describes the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error). A value greater than 50% was considered to represent substantial heterogeneity (Higgins 2008). When heterogeneity was present, we conducted random-effects model meta-analysis to incorporate the extent of variation.

Data synthesis

For meta-analyses, we calculated mean differences (MDs) with 95% confidence intervals (CIs) for continuous outcomes. Where studies were sufficiently similar in terms of population, inclusion criteria, interventions and/or outcomes (including the time(s) at which these were assessed), we pooled the data statistically using meta-analysis. We performed formal fixed-effect model meta-analysis, reporting pooled MDs (continuous variables using the same scale). For state anxiety, we used random-effects model meta-analysis due to the substantial heterogeneity among trials ($I^2 > 50\%$). Separate meta-analyses were carried out for each of the primary outcomes where appropriate. The decision to carry out meta-analyses was made by consensus of RC, JW and LM. We also used narrative review to present the results of the studies as relative and absolute percentage change and direction of effect for each of the outcomes.

Sensitivity analysis

We had planned to conduct sensitivity analysis by risk of bias of included studies, publication status, eligibility of patients, size of the study, and length of time between patient registration to the service and delivery of the intervention, and between delivery of intervention and measurement of the effect. However, there were too few studies to perform these analyses.

Consumer participation

The protocol and review were subject to standard Cochrane Consumers and Communication Review Group editorial and external peer review processes, which included at least one consumer referee. The protocol also included a number of consumer-focused outcomes, guided by the Cochrane Consumers and Communication Review Group taxonomy of outcomes.

RESULTS

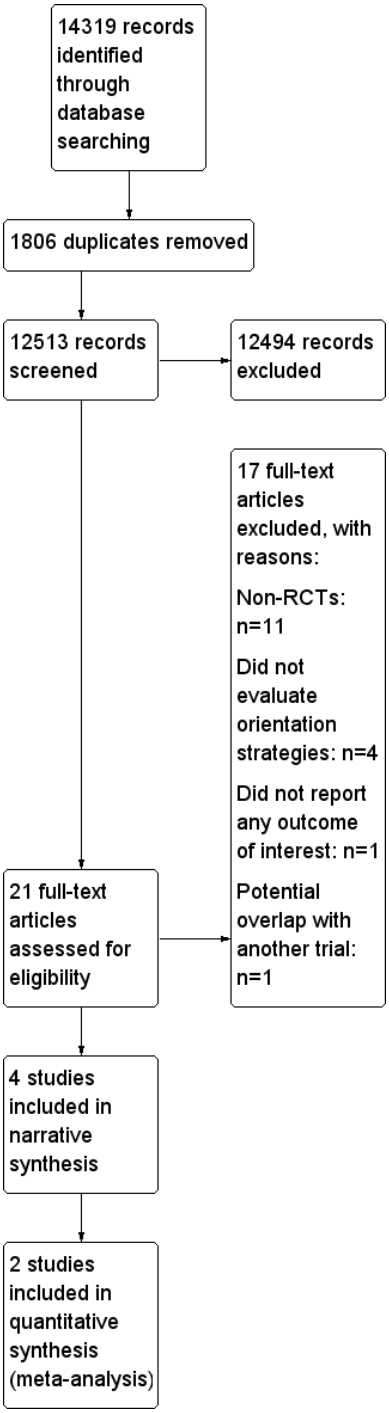
Description of studies

See: Characteristics of included studies; Characteristics of excluded studies.
See: 'Characteristics of included studies'; 'Characteristics of excluded studies'; 'Characteristics of ongoing studies'.

Results of the search

In total, we identified 14,319 citations from the electronic database searches. Of these, 12,513 titles remained after the removal of duplicates (n=1,806). After we screened all the titles and abstracts, 21 articles were potentially relevant and we retrieved them in full text. Of these 21 titles, we included 4 studies and excluded 17 which did not meet the criteria specified at Criteria for considering studies for this review. All trial authors were contacted and asked if they were aware of any other trials. No extra trials were identified from this process. Please see Figure 1 for the study flow chart.

Figure 1. Study flow diagram.



Included studies

We included four randomised controlled trials involving 610 participants (Burish 1991; Hoff 2005; McQuellon 1998; Mohide 1996). All were published in English. Three studies were conducted in the USA (Burish 1991; Hoff 2005; McQuellon 1998) and one in Canada (Mohide 1996).

Interventions

Components of the intervention

All interventions in the four studies were orientation programs comprising a combination of eight different components, none of which were common to all studies. These components included: information about the healthcare team (Hoff 2005; McQuellon 1998; Mohide 1996); a clinic tour (Burish 1991; Hoff 2005; McQuellon 1998); information about the actual facility (e.g. map, parking and opening hours) (Hoff 2005; McQuellon 1998; Mohide 1996); a description of clinical procedures (Burish 1991; McQuellon 1998); information about supportive services available in the cancer centre and provided by external organisations (McQuellon 1998); a question and answer session (Burish 1991; Hoff 2005; McQuellon 1998); and treatment-related information (Burish 1991; Hoff 2005) .

Two formats/ modes were used in the interventions; written materials (used in all studies) and audiovisual equipment (videotape) (used in one study Burish 1991). In terms of delivery methods, the interventions were delivered either via mail (Mohide 1996) or face to face (Burish 1991; Hoff 2005; McQuellon 1998). Table 1 illustrates the components, materials and delivery methods used in the included studies.

Providers of the intervention

One study did not use a delivery provider, but used materials such as an information package (Mohide 1996). Hoff 2005 used oncology nurses who worked in the department to deliver their program, but did not describe the nurses' qualifications. McQuellon 1998 used an oncology counsellor (the position rotating between three Masters level counsellors, one doctoral student and one PhD psychologist). Burish 1991 described the person who delivered the intervention as "the therapist" without further qualification. None of these studies mentioned use of a script or a standard protocol to ensure consistency between interventions delivered by different people.

Timing of the intervention

In one study, participants were mailed the orientation package before their first appointment at the cancer care centre (Mohide 1996). For the face-to-face sessions in the McQuellon 1998 trial, participants received the interventions during their first appointment at the cancer care centre before they saw the physician. Participants of the Burish 1991 trial received their intervention immediately before their first chemotherapy session. The participants of the Hoff 2005 trial received their intervention on the day of their first meeting with their physicians, only if they were recommended for radiotherapy.

Intensity of intervention

Although interventions in all included studies involved written materials, no studies reported the number of pages, the size of font used in these materials, the time patients took to understand the materials, or how many times patients needed to refer to the information. For this reason, the intensity of intervention could only be measured by the length of time given for reading the materials or watching the videos. For the studies that used face-to-face contact, video, or a combination of both, the interventions took 90 minutes (Burish 1991) and 15 to 20 minutes (McQuellon 1998) respectively. Hoff 2005 and Mohide 1996 did not report on the duration the intervention required.

Participants

All studies included new oncology patients with a diagnosis of cancer, who were adults over 18 years of age. Two studies included patients who were referred to a cancer centre, regardless of whether they were about to receive treatment or not (Mohide 1996; McQuellon 1998). Burish 1991 included only those who were commencing chemotherapy and Hoff 2005 included only those who were scheduled for radiotherapy. All studies allowed family/caregivers to receive the interventions (going along with the patients to the clinic tour, reading the written materials and watching the video). Mohide 1996 did not consider family/caregivers to be participants, but collected data on how many relatives had read the information package and found it useful.

We present detailed information about the participants in each study in the Characteristics of included studies tables.

Outcomes

All studies assessed the impact of orientation interventions on psychological outcomes (i.e. anxiety and distress). In addition, a variety of other outcome measures were reported. For example, Burish 1991 measured the effects of the coping preparation program on

knowledge about chemotherapy, physiological measures (i.e. systolic and diastolic blood pressure and pulse rate), anticipatory nausea/vomiting and measures of general coping. Hoff 2005 assessed the effects of the intervention on service utilisation, knowledge of radiotherapy, satisfaction with care and treatment adherence. Of the four studies, only one measured cost (Mohide 1996). All outcomes, except for those of the McQuellon 1998 trial, were measured immediately after the intervention, with no follow-up of patients to investigate whether outcomes were sustained over time. The McQuellon 1998 trialists administered the questionnaires at initial assessment and also at follow-up (3 days following the clinic appointment, questionnaires were mailed to patients in both the intervention and the usual care groups.)

None of the studies explicitly set out to measure harms or adverse effects as outcomes. However, all the outcome measures were capable of showing negative as well as positive effects.

Excluded studies

Seventeen studies were excluded (see Characteristics of excluded studies). The reasons for exclusions were that the studies were not RCTs, cluster RCTs or quasi-RCTs; or did not evaluate the effects of an orientation intervention.

Risk of bias in included studies

All possible attempts were made to contact study authors to seek more information about any unclear reporting in relation to risk of bias in the included studies. All authors replied and were able to give information only in relation to some but not all of the questions asked by the review authors. We present a risk of bias graph and a risk of bias summary at Figure 2 and Figure 3 respectively.

Figure 2. Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

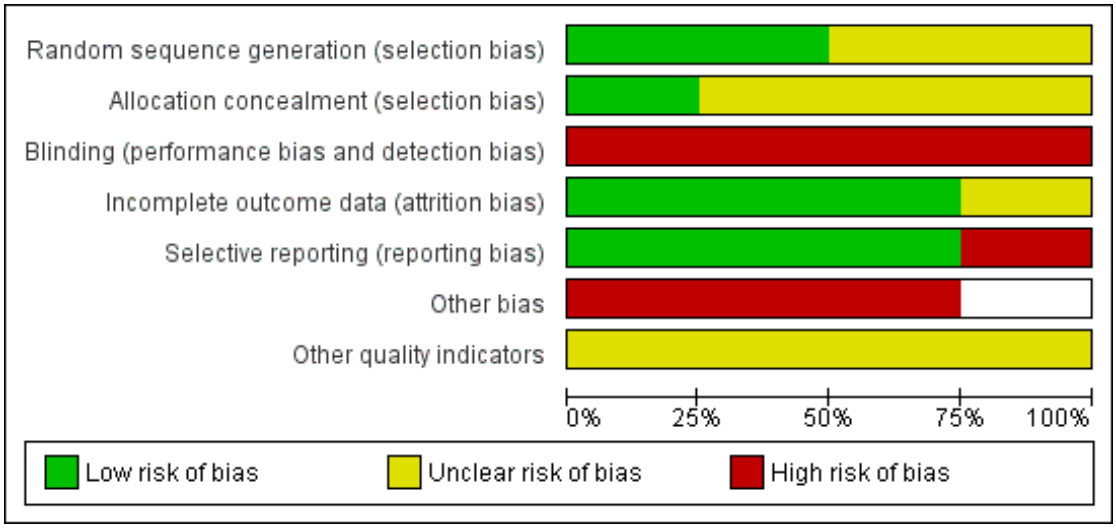
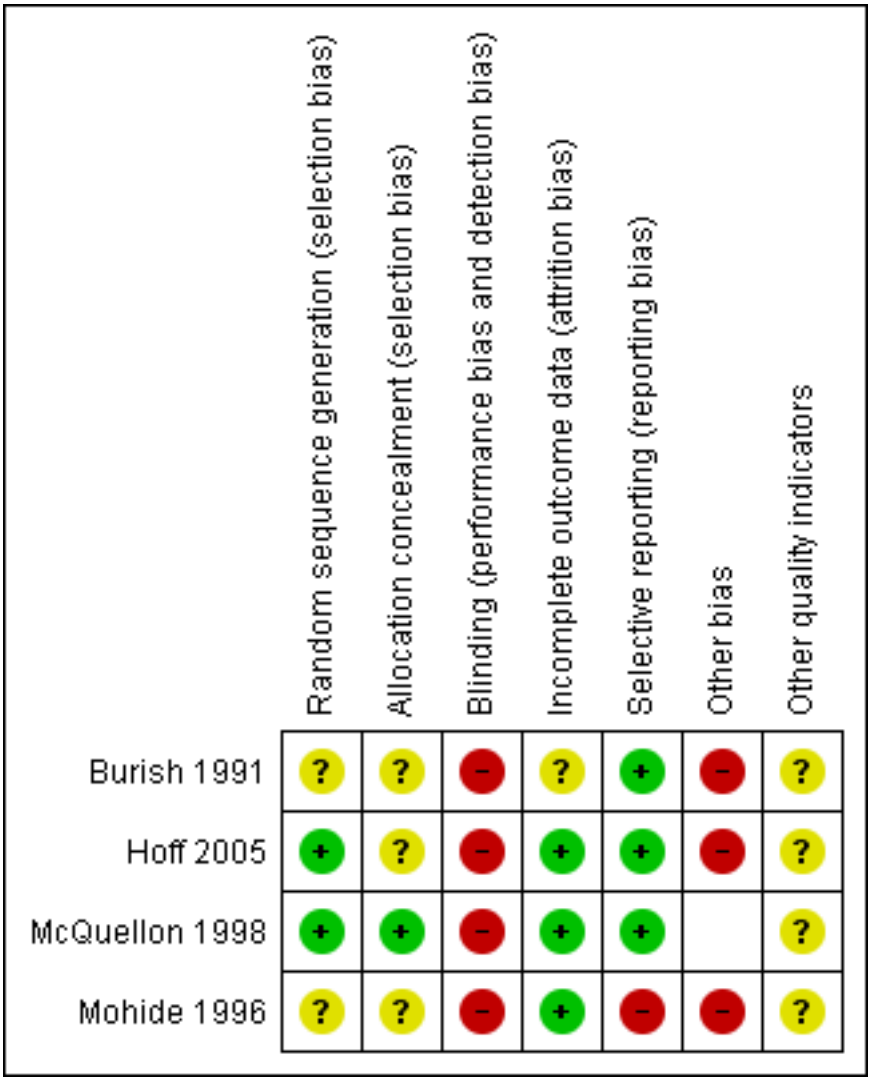


Figure 3. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.



Allocation

All included studies used random allocation. McQuellon 1998 generated the allocation sequences using random number tables. Burish 1991 and Mohide 1996 mentioned that participants were assigned using stratified random assignment. Cancer populations are often heterogenous and therefore can have very different treatments and treatment regimens across patients with different diagnoses. Hence, stratification is an appropriate strategy in this type of trial. Mohide 1996 stratified the random allocation by disease site: breast, gynaecological, lung or prostate. It was not clear how Burish 1991 stratified the random assignment.

Regarding allocation concealment, three studies (Burish 1991; Hoff 2005; Mohide 1996) did not report on the mechanism used to implement the random allocation sequence, nor did they describe any steps taken to conceal the sequence until interventions were assigned. The author of McQuellon 1998 confirmed that the person who phoned to recruit patients was not aware of the allocated group.

Blinding

Blinding of the intervention delivery was not possible in these trials. It was also not possible to blind outcome assessment in the Hoff 2005 trial, because self-reported questionnaires were used. The remaining studies did not mention if those conducting the outcome assessment were blinded to group assignment.

Incomplete outcome data

Three studies provided details of attrition and exclusions from the analysis of the main outcomes (Hoff 2005; McQuellon 1998; Mohide 1996). One RCT (Burish 1991) provided some details of attrition and exclusions, but did not describe how many people were allocated to the groups and how many people were lost to follow up. The results of Burish 1991 were presented without a sample size given for each outcome measure. The trial authors were asked in correspondence to give details in relation to attrition and sample size in the analysis for each of the main outcomes, but they were not able to provide any additional information.

Selective reporting

Results were available for all the proposed outcomes in three RCTs (Burish 1991; Hoff 2005; McQuellon 1998).

Authors of the Mohide 1996 trial planned to assess the effects of their educational packages on levels of anxiety, depression and self-efficacy. However, only the results of anxiety and depression as measured by the General Severity Index (GSI) were reported. The study did not report on the levels of the self-efficacy.

Other potential sources of bias

We found no other potential sources of bias in the trials included in this review.

Effects of interventions

See: **Summary of findings for the main comparison** Information interventions for orientation to cancer care facilities for

We report main results from the four included studies (Burish 1991; Hoff 2005; McQuellon 1998; Mohide 1996)

Knowledge and understanding

Burish 1991 and Hoff 2005 included treatment-related information in their orientation interventions, and reported outcomes of knowledge in relation to chemotherapy (Burish 1991) and radiotherapy (Hoff 2005). Burish 1991 reported that patients who received their orientation program rated "the explanation they received about the risks and benefits of chemotherapy to be significantly better" ($P < 0.05$), and were significantly "more knowledgeable about the side effects of their specific treatments" ($P < 0.002$) and significantly "more knowledgeable about cancer and chemotherapy in general" ($P < 0.001$), compared with controls. However, trialists did not report the mean scores for these outcomes and the number of participants analysed. Hoff 2005 reported non-significant differences in the patients' and relatives' knowledge of radiotherapy between those who received the orientation program and those who did not (MD -0.18, 95% CI -1.02 to 0.66) (Analysis 1.1).

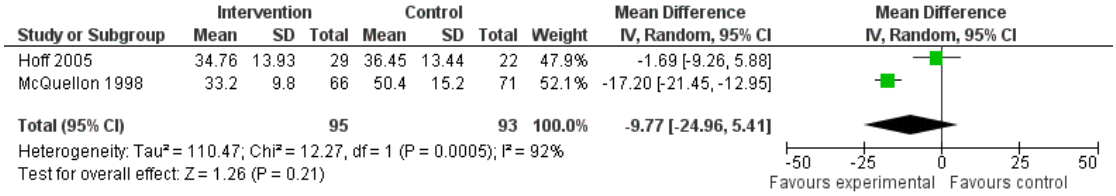
Health status and wellbeing

Psychological outcomes

State anxiety

State anxiety represents the level of anxiety at the time of completing the questionnaire, while the level of trait anxiety represents anxiety in general. For state anxiety, two trials (Hoff 2005, McQuellon 1998) with 95 participants in the orientation program group and 93 participants in the usual care control group compared state anxiety in the two groups as measured by the STAI-S score. There was heterogeneity among trials ($Chi^2 = 12.27$, $P = 0.0005$; $I^2 = 92\%$). Random-effects meta-analysis suggests a non-statistically significant difference ($P = 0.21$) between the orientation and control group, with the orientation program group associated with reduced state anxiety (MD -9.77, 95% CI -24.96 to 5.41) (see Figure 4; Analysis 2.1).

Figure 4. Analysis 2.1: Interventions to reduce anxiety compared with control, State anxiety (STAI-S)



Trait anxiety

One trial (McQuellon 1998) with 55 participants in the orientation program group and 55 participants in the usual care control group compared trait anxiety in the two groups as measured by the STAI-T score. There was a statistically significant difference (P = 0.01) between the orientation and control groups, with the orientation program group associated with reduced trait anxiety (MD -4.70, 95% CI -8.37 to -1.03) (Analysis 2.2).

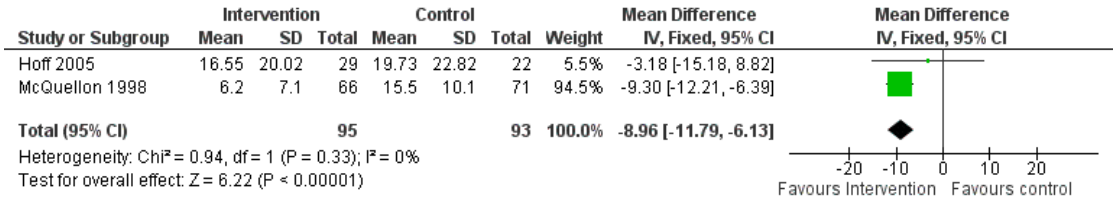
General anxiety

For general anxiety, Mohide 1996 reported no significant difference between those who received the orientation interventions and those who did not, as measured by Brief Symptom Inventory (BSI) - Anxiety: (MD -0.20, 95% CI -3.07 to 2.67) (Analysis 2.3).

Distress

For distress, two trials (Hoff 2005; McQuellon 1998) with 95 participants in the orientation program groups (combined) and 93 participants in the usual care control groups (combined) compared distress in the two groups as measured by the Profile of Mood State -Total Mood Disturbance (POMS-TMDS) score. There was no detected heterogeneity among the two trials (Chi^2 = 0.94, P = 0.33; I^2 = 0%). Fixed-effect meta-analysis suggests a statistically significant difference (P < 0.00001) between the orientation and the control groups, with the orientation program group associated with reduced distress (MD -8.96, 95% CI -11.79 to -6.13) (see Figure 5; Analysis 3.1).

Figure 5. Analysis 3.1: Interventions to reduce distress compared with control, Profile of Mood State - Total Mood Disturbance (POMS-TMD)



Another trial (Mohide 1996) with 102 participants in each group (New Patient Information Package (NPIP) vs control) reported no difference between the two groups in terms of emotional distress as measured by the General Severity Index (GSI) (MD 0.20, 95%CI -2.34 to 2.74) (see Analysis 3.2) .

Depressive symptoms

Of the four studies, three measured depressive symptoms (Burish 1991; McQuellon 1998; Mohide 1996). Both Burish 1991 and McQuellon 1998 reported positive benefits of their orientation programs on depressive symptoms. McQuellon 1998 measured depressive symptoms in 135 patients with the Centre for Epidemiolgic Studies-Depression Scale Screener (CES-D). For those with positive depressive symptoms as per the CES-D screener, there was a significant difference between those who received the orientation program and those who did not (P < 0.001). However, the trialists did not report mean scores, standard deviations or the number of patients. Burish 1991 also reported a "significant" positive effect of their intervention on depressive symptoms as measured by the Multiple Affect Adjective Checklist (MAACL). However, the authors did not report on the depression scores, the number of patients analysed, nor the P values. Mohide 1996 compared the effects of the intervention (NPIP) with another less intense intervention (mini-NPIP); and there was no difference in the depression score after the intervention (MD -0.40, 95%CI -2.95 to 2.15) (Analysis 4.1)

Coping

One RCT (Burish 1991) measured coping. Burish 1991 reported that their orientation program yielded a positive effect on coping in general (P < 0.03). In particular, working patients who received the intervention reported their disease and its treatment (i.e. chemotherapy) interfered significantly less with their daily lives and their ability to work than those who did not receive the intervention (P < 0.005). However, the mean scores of these outcomes and number of participants analysed were not reported by the trialists.

Physiological outcomes and symptoms

Burish 1991 reported that there was no difference in physiological measures (i.e. systolic and diastolic blood pressure and pulse rate). However, significant differences were found in "anticipatory nausea" between those who received their orientation intervention and those who did not (P < 0.02). A clear definition of "anticipatory

nausea" was not provided. The trialists did not report mean scores, standard deviations and the number of participants analysed for further analysis in this review.

Evaluation of care

Satisfaction

One study measured satisfaction (Hoff 2005). The Hoff 2005 trial of 51 patients and 34 relatives/friends reported a significant difference between patients who received the orientation program and those who did not (P < 0.03). However, no significant effect was observed in the relatives. This trial did not report the satisfaction score, the standard deviation and the number of participants analysed for further analysis in this review.

Harms

None of the four included studies measured harms, nor did they report any adverse events associated with the interventions.

Communication

One study of 200 participants investigated the effect of an orientation program on knowledge in relation to the cancer care facility (McQuellon 1998). At one week follow up, patients were asked to recall whether they had received particular types of information about the cancer care service (yes/no). Significantly higher percentages of participants in the intervention group reported that they received information about: hours clinic open (23% vs 97%), clinic phone number (34% vs 95%), reaching someone after hours (23% vs 88%), financial counselling (6% vs 69%), how to contact business office (10% vs 85%), the cancer patient support program (20% vs 92%), coping with cancer meetings (7% vs 83%), support for family (4% vs 84%), support groups (11% vs 85%), managing appearance changes (3% vs 69%), getting around the hospital (13% vs 88%), resource room (13% vs 94%), organisations that can help (0% vs 99%), eating facilities (13% vs 89%), tour of clinic (7% vs 98%), healthcare team (16% vs 88%), reasons for waiting (16% vs 87%), reasons for not seeing a doctor (7% vs 76%), writing down questions (10% vs 91%) and important facts (13% vs 92%) at follow-up, as compared to the control group (all P < 0.001). However, number of participants analysed was not reported by the trialists.

Service delivery oriented outcomes

Cost

Only one study compared the cost associated with the two orientation information packages (NPIP vs mini-NPIP) (Mohide 1996). The cost of NPIP and the mini-NPIP were $44,650 per year and $19,900 per year in Canadian dollars respectively. The difference between the two packages was approximately $24,750 in Canadian dollars. There was no difference in any of the outcomes between using higher cost package (NPIP) or lower cost package (mini-NPIP).

Service use

McQuellon 1998 reported that a higher percentage of patients who received the orientation program met with a counsellor (P < 0.001), accessed information from the clinic resource room (P < 0.05) and had discussed cancer with the local "cancer info service" (P < 0.001). Only P values were reported.

DISCUSSION

Summary of main results

This systematic review has found a low level of evidence that orientation programs reduce distress in cancer patients at the beginning of their journey in a cancer care facility. Whilst some results in the included trials indicated that those who received an orientation intervention increased their knowledge about the cancer care facility and reduced trait anxiety, these results were not consistent across all of the trials. Moreover, trials were small and contained many of the common failings of trial conduct such as lack of allocation concealment and unblinded outcome assessment. The remaining studies showed no effect associated with the intervention, although low statistical power and risk of bias in these studies means that an effect cannot be entirely ruled out. None of the included studies measured harms. There was limited information in relation to costs, levels of satisfaction, and service use. Very limited information in relation to relatives/ carers is available in the included studies. See Summary of findings for the main comparison.

Overall completeness and applicability of evidence

This review is based on a comprehensive search strategy without language restrictions, so is likely to be complete. Convincing, high-quality evidence for any of the orientation interventions was lacking, so answers to the review questions remain incomplete. All trials targeted participants newly registered to a cancer care service and their families, and most of our planned outcomes were assessed by at least one of the included trials. However differences in outcome measurement and program components, and poor reporting made combining data problematic for a number of outcomes. Carers were invited to participate in the interventions in a number of studies but included as participants in only one trial,

making it difficult to evaluate the effects on this population. Some important outcomes were not measured at all (e.g. levels of self-efficacy, knowledge retention and harms).

All of the included trials were conducted in North America; this imbalance may influence the overall applicability of evidence. It would be useful to see similar studies from other healthcare systems, to test the robustness of results from this review. Further, the costs of such interventions also need to be considered. Only one of the four included studies included an economic evaluation. In the current climate of increasing demand for cancer care and financial constraint, the costs of interventions should not be ignored.

The most appropriate timing for providing the intervention also remains unclear. Two approaches were used in the included trials; before the first visit, and at the first visit to the cancer care facility. These two approaches were not tested within the same trial, however. It seems logical to provide information before the first visit, so patients are aware of the setting, the facilities and what they may expect during the first visit. The other issue to consider, when deciding about the most appropriate time to provide an orientation intervention is that there may be two groups of patients involved; those with a confirmed cancer diagnosis and those who do not yet have a confirmed cancer diagnosis. One program may suit both groups, but their needs may well be different.

Quality of the evidence

Summary of findings for the main comparison summarises seven main outcomes (both primary and secondary outcomes) of this review: knowledge and understanding, trait anxiety, state anxiety, distress, depression, satisfaction and harms as reported in this review.

In terms of overall quality of evidence, two out of four included trials had relatively small sample sizes (Burish 1991; Hoff 2005). These two studies each recruited less than 100 participants, so were likely to be underpowered. There were also substantial limitations in the design and implementation of the included studies. Three out of the four studies provided insufficient information or did not address more than two of our risk of bias assessment criteria (including adequate sequence generation, allocation concealment, blinding, incomplete outcome data addressed, selective reporting) (Burish 1991; Hoff 2005; Mohide 1996). Whilst it would have been difficult to blind the intervention, blinding of outcome assessment would have been possible for some outcomes.

Combining data also posed problems. Heterogeneity was present in the meta-analysis for STAI-S. This may be due to outcomes being measured at different time points and the different populations being studied. The McQuellon 1998 trial included newly diagnosed cancer patients, whereas the Hoff 2005 trial only included new cancer patients who were receiving radiation treatment. Further, Hoff 2005 measured outcomes at the end of radiation treatment, whilst McQuellon 1998 measured outcomes one week post intervention. With respect to POMS-TDMS scores, there was also evidence of potential skewness in data, where the SDs were higher than the means for some results, particularly in the Hoff 2005 trial. Skewness may lead to spurious conclusions (Cochrane 2002).

Potential biases in the review process

We are unaware of any biases in the review process. We used a comprehensive search strategy. It is possible that studies may have been conducted but not published, or published in journals that were not indexed in the databases we accessed. The review authors had no conflicts of interest and the assessments for inclusion eligibility, risk of bias and data extraction were done independently.

Agreements and disagreements with other studies or reviews

We are not aware of any other reviews comparing different orientation strategies in new cancer patients.

AUTHORS' CONCLUSIONS

Implications for practice

The review has demonstrated the feasibility of designing and conducting structured orientation programs for patients who are newly registered in a cancer care centre. The aim of orientation programs is to improve certain outcomes at the beginning of the patients' and carers' experience with the cancer care centre. Structured orientation programs may be useful in providing important information to patients, with potential benefits of improving distress and trait anxiety in patients. However, there is insufficient evidence to inform the best way to deliver program information (audio visual or face to face). Nor is it clear if a higher intensity and cost intervention is superior to a lower intensity and cost intervention. Although there were modest effect sizes favouring orientation programs for some of the outcomes such as trait anxiety, and distress, these were limited, so recommendations cannot be made.

Implications for research

The cancer care community and cancer patients need well-designed, high-quality trials to make informed decisions about the emotional, clinical and economic usefulness of orientation programs in this specialty area. Further sufficiently-powered and well-conducted trials are required to provide evidence to guide program development in terms of intensity, nature, mode of delivery and the effectiveness of resources used in information giving at an early point of contact. Future trials should test interventions that

can achieve maximum patient outcomes with the least intensity programs. Important outcomes such as knowledge acquisition, retention of information, ability to recall information, anxiety, satisfaction, quality of life, cost and harms should be included. We also suggest that measurement at longer time points beyond treatment (e.g. 1 month, 6 months and 12 months) be included in future trials. Further, the effects of orientation programs should also be tested in countries other than North America.

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* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Burish 1991

Methods	**Objective:** Assess the effect of an orientation program (coping preparation) on knowledge, physiological measures, nausea and vomiting, affect (using Multiple Affect Adective Checklist (MAACL), post chemotherapy rating scale, anxiety immediately post-chemotherapy session using separate 7-point scales, home records (for 3 days post-chemotherapy session using separate 7-point scales for nausea and anxiety), sickness impact profile (SIP) before the 1st and 3rd chemo treatments, knowledge questionnaire before the 1st and 3rd chemo treatments **Study design:** Randomised controlled trial (4 arms) **Recruitment:** Approached at their first visit **Allocation:** Randomly assigned **Total number approached:** 74 **Number recruited:** 60 **Method of analysis:** ANOVA and MANOVA age unevenly distributed across groups so age was used as a co-variate in all analyses **Follow-up:** Data were collected during each treatment over the first five treatments
Participants	**Country**: USA **Clinical setting**: Vanderbilt University Medical Centre or one of its affiliated hospitals **Inclusions:** Not clearly stated **Age:** Mean age: 53, SD:14.48, range:16 to 80 **Gender:** Female: n = 29, Male: n = 31 **Type of diagnosis:** Lung: n = 15, Breast: n = 11, Leukemia/lymphoma: n = 10, Ovarian: n = 7 and other types: n = 17 **Ethnicity:** Not mentioned
Interventions	**Intervention 1:** A coping preparation program (PREP) was a 90 minute intervention involving a tour of the oncology clinic, videotape presentation about chemotherapy, discussion/question/answer session and a booklet for patients/families to take home. The aim of the intervention was to Improve familiarity with the physical setting and with chemotherapy **Intervention 2:** Relaxation training (RT) involved three sessions before the first three treatments, administered 45 minutes before patients were scheduled to receive chemotherapy. Patients receiving the RT intervention were taught to relax using set procedures **Standard care:** Patients in the standard treatment condition received the routine clinical preparation. A clinic nurse spent approximately 25 minutes teaching the patient about chemotherapy and its purposes, the drugs he or she would be receiving, the possible side effects, and the schedule of drug administration. The nurse also answered any questions the patient had **Arm 1:** PREP only **Arm 2:** RT only **Arm 3:** PREP and RT **Arm 4:** Control receiving standard care **Administered by**: N/A **Intensity**: The intervention is a coping preparation program of a 90 minute individual

Burish 1991 (*Continued*)

	appointment before the first chemotherapy session **Mode:** Face to face **Consumer involvement:** Not mentioned
Outcomes	**Outcomes and timing of outcome assessments::** Knowledge (knowledge questionnaire) - before the first and third chemotherapy treatments Physiological measures (systolic and diastolic blood pressure and pulse rate) Anticipatory nausea/vomiting (Multiple Affect Adjective Check List/post chemotherapy rating scale/home records) - during treatment and immediately post-chemotherapy session and over three days post-chemotherapy session) Sickness (Sickness Impact Profile) - Before the first and third chemotherapy treatments Measures of general coping - (unclear) Home Ratings (Family Rating Scale) **Validity and reliability of instrument used:** There was no mention of the validity and reliability of the tools used
Notes	For the intervention groups, all family members who accompanied patients to the medical centre joined them during the intervention sessions No a priori sample size calculation was reported and the sample was small (60 people between the 4 arms)

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	Not stated
Allocation concealment (selection bias)	Unclear risk	Not stated
Blinding (performance bias and detection bias) All outcomes	High risk	Participants: impossible to blind People who conducted the outcome assessment: unclear
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Some details of attrition and exclusions were given, but did not describe how many people were allocated to the groups and how many people were lost to follow up
Selective reporting (reporting bias)	Low risk	Results were available for all of the proposed outcomes
Other bias	High risk	Age difference between groups (but analysis adjusted for this)
Other quality indicators	Unclear risk	No dates about when data were collected No information about how many in each group in all reporting

		Not reported if ethical clearance was obtained in the publication. From email correspondence, the trial author confirmed that ethical clearance was obtained

Hoff 2005

Methods	**Objective:** To evaluate the effects of an orientation program on patients and family members for reducing state anxiety and distress, and increasing knowledge about radiation therapy **Study design:** Randomised controlled trial **Recruitment:** If radiation treatment was recommended after the patient met the radiation oncologist, one of the oncology nurses approached the patient about speaking with the investigator about the study **Allocation:** Randomly assigned **Total number approached:** 100 **Number recruited**: 96 **Method of analysis:** Not mentioned **Follow up:** 86% **Consumer involvement:** Not mentioned
Participants	**Country:** USA **Clinical setting:** Radiation oncology department at a Cancer Centre **Inclusions:** New patients with all types of cancer who consented to treatment in the Radiation Oncology Department. Patients were excluded if they had received radiation therapy previously, or if they were judged by clinic nursing staff to be too mentally or physically debilitated to participate **Mean age:** 66 (SD: 12) **Gender:** Female: 65% **Time of diagnosis:** Not mentioned **Ethnicity:** 91% Caucasian, 9% African American
Interventions	**Intervention:** Arm 1: an orientation program: A brief explanation of the purpose of the intervention, familiarizing patients and families with the Cancer Centre, informing them of support services available to them, encouraging them to be advocates for themselves and ask for support as needs arose during treatment, providing them with written information to which they could refer throughout the course of treatment. A tour of the Radiation Oncology Department was given to participants. A map was included in the written materials. Information also included clinic staff names, and their telephone numbers, how to reach a radiation oncologist, the roles of radiation therapist, music therapist, oncology nurses, clinic chaplain, and a case manager Arm 2: control group receiving usual care **Administered by:** Oncology nurses (no qualifications described) **Intensity:** Not mentioned **Mode:** face to face/ written

Hoff 2005 (*Continued*)

Outcomes	**Outcomes:** Anxiety (State Trait Anxiety Inventory) Mood state (the Profile of Mood State - Total Mood Disturbance) Knowledge of radiation therapy (a 10-item multiple choice test developed by the trial authors for this study) Health service use (a checklist of support services developed by the trial authors for this study) Satisfaction (a 7-item survey developed by the trial authors for this study) **Timing of outcome assessment:** T1: initial consultation at the oncology clinic, T2: At completion of radiation therapy (can be up to 8 weeks after intervention) **Validity and reliability of instrument used:** The instruments used to measure main outcomes (State Trait Anxiety Inventory and the Profile of Mood State-Total Mood Disturbance) were validated and reliable for cancer patients. However, there was no mention of the validity and reliability of the other tools used
Notes	No a priori sample size calculation was reported

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Randomly allocated. However, the study did not mention how the sequence was generated
Allocation concealment (selection bias)	Unclear risk	Not mentioned
Blinding (performance bias and detection bias) All outcomes	High risk	Participants: impossible People who conducted the outcome assessment: self-report
Incomplete outcome data (attrition bias) All outcomes	Low risk	Details of attrition and exclusions from the analysis provided
Selective reporting (reporting bias)	Low risk	All measured outcomes were reported
Other bias	High risk	The results did not have an identical post intervention time. It was different for all patients as length of time for radiation treatment varied according to cancer group. Unclear if this could have affected results It was not a consecutive sample, but rather, self-volunteers after checked by the nurse
Other quality indicators	Unclear risk	Not reported if ethical clearance was obtained in the publication. From email cor-

		respondence, the trial author confirmed that ethical clearance was obtained The dates for data collection was not reported. From email correspondence, the trial author confirmed that data collection were from early 1999 to middle 2000 From email correspondence, the trial author confirmed that cases with any missing data were removed from the analysis

McQuellon 1998

Methods	**Objective:** To test a brief orientation program for reducing anxiety, depressive symptoms and overall distress in cancer patients at their initial clinic visit **Study design:** Randomised controlled trial **Recruitment:** Consecutive sample. The receptionist called scheduled patients and asked if they would like to participate **Allocation:** Randomly assigned **Total number approached:** 279 **Number recruited**: 200 **Method of analysis:** ANOVA repeated measures (for continuous outcomes) and Chi^2 test (for binary outcomes) **Follow up:** 91% **Consumer involvement:** Not mentioned
Participants	**Country:** USA **Clinical setting:** Outpatient oncology clinic at a comprehensive Cancer Centre **Inclusions:** All English speaking adult (> 18 years of age) cancer patients attending the outpatient oncology clinic at the of Wake Forest University for an initial oncology consultation **Mean age:** 55.3 to 55.6 (SD 14.4 to 15.2) **Gender:** Male: n = 99, female: n = 101 **Time of diagnosis:** 70% of all patients were diagnosed within the past six months. The median time since diagnosis was 40 days **Ethnicity:** African-American: n = 15, White: n = 184, Asian: n = 1
Interventions	**Intervention:** Arm 1: an orientation program consisted of a tour of oncology clinic, description of clinic procedures, provision of information and question and answer session Arm 2: control group receiving usual care **Administered by:** an oncology counsellor (included three masters level counsellors, one doctoral student and one PhD psychologist) **Intensity:** 15 to 20 minutes. **Mode:** face to face
Outcomes	**Outcomes:** Anxiety (State Trait Anxiety Inventory), Mood State (the Profile of Mood State - Total Mood Disturbance) Depressive symptoms (Centre for Epidemiologic Studies - Depression Scale)

McQuellon 1998 (*Continued*)

	Timing of outcome assessment: T1: initial consultation at the oncology clinic, T2: telephone call within a week **Validity and reliability of instrument used:** The instruments used (State Trait Anxiety Inventory, the Profile of Mood State - Total Mood Disturbance and the Centre for Epidemiologic Studies - Depression Scale) were validated and reliable for cancer patients
Notes	No a priori sample size calculations but retrospective calculations supplied

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Not reported. From email correspondence, the trial author confirmed that a random number table was used
Allocation concealment (selection bias)	Low risk	Not reported. From email correspondence, the trial author confirmed that the person who phoned the patient was not aware of the allocated group
Blinding (performance bias and detection bias) All outcomes	High risk	Participants: impossible People who conducted the outcome assessment: unclear
Incomplete outcome data (attrition bias) All outcomes	Low risk	Details of attrition and exclusions from the analysis provided
Selective reporting (reporting bias)	Low risk	Proposed outcomes were all measured
Other quality indicators	Unclear risk	No dates about when data were reported - the study by Wells 1995 was conducted at the same institution. From email correspondence, trial author recalled that data collection period was Sept 1997 to Feb 1998. There was a possibility of duplicating data in both studies Not reported if ethical clearance was obtained in the publication. From email correspondence, the trial author confirmed that ethical clearance was obtained Unclear who obtained the consent (probably the counsellor).

Mohide 1996

Methods	**Objective:** To evaluate the extent to which a new patient information package or a mini version of the same package reduces emotional distress and meets the informational needs of patients arriving at a tertiary cancer centre for the first time **Study design:** Randomised controlled trial **Recruitment:** Consecutive sample, identified from referral forms to the cancer centre. Randomised into one of the three groups (not stated how), and stratified by disease group. Intervention group posted packages of information (short or long), one week before their appointment. Patients who were potentially eligible were approached 30 minutes before their appointment and asked to participate **Allocation:** randomly assigned (stratified according to disease site: breast, gynaecological, lung and prostate) **Total number approached:** Not reported **Number recruited**: 465, but 161 excluded post randomisation leaving 304 participants **Method of analysis:** One way ANOVA and Linear regression models **Follow up:** N/A **Consumer involvement:** Not mentioned
Participants	**Country:** Canada **Clinical setting:** Outpatient oncology clinic at a regional cancer centre **Inclusions:** Newly diagnosed breast, gynaecological, lung and prostate cancer patients attending the cancer centre for the first time. Exclusions: patients who were too ill to complete the interview, were non-English speaking, arrived too late for interview, had previous diagnosis of cancer, had appointment cancelled owing to other administrative reasons or failed to give informed consent **Mean ages:** 61 to 64 (between the three groups, with no SDs provided) **Gender:** Male: n = 125, female: n = 179 **Time of diagnosis:** 70% of all patients were diagnosed within the past six months. The median time since diagnosis was 40 days **Ethnicity:** Not reported
Interventions	**Interventions:** Arm 1: Patients received the new patient information package (NPIP) at least one week before their initial appointment. The NPIP had ten sheets of paper organised in a step-wise format in a folder. This permitted patients and their family members to scan and select information easily from a menu of topics including the cancer centre location, a description of healthcare team, treatment services, research and educational activities at the centre, accommodation and community services provided. This package also has a personalised letter of introduction meant to convey the commitment of the cancer centre to individual patient care, the name and telephone number of a contact person at the centre who might provide additional information, and a question/answer sheet for the patient to assist in organising questions to be addressed to the healthcare team and to act as an aid to memory at the initial appointment Arm 2:The mini-NPIP group received the condensed version of the information contained in the NPIP at least one week before their initial appointment. The information topics selected for this package included information about what to expect at the first visit, directions to the centre, a map and parking information. This package also had a personalised letter of introduction meant to convey the commitment of the cancer centre to individual patient care, the name and telephone number of a contact person at the centre who might provide additional information, and a question/answer sheet for

	the patient to assist in organising questions to be addressed to the healthcare team and to act as an aid to memory at the initial appointment Arm 3: The control group received usual care and was not mailed an information package
Outcomes	**Outcomes:** Depression and anxiety (Brief Symptom Inventory and General Severity Index), self-efficacy (Sherer Self-Efficacy Scale), patient preference and cost **Timing of outcome assessment:** T1: First appointment **Validity and reliability of instrument used:** The instruments used (Brief symptom inventory, General Severity Index and the Sherer Self-Efficacy Scale) were reported by the trial authors to be validated and reliable for cancer patients
Notes	This study did not collect any baseline data on depression and anxiety No a priori sample size calculation was reported Four hundred sixty-five patients were randomised into three groups, with arm 1 receiving the new patient information package (NPIP), arm 2 receiving a mini NPIP and arm 3 being the control group. When the number of excluded patients in each arm was added to the number of patients who participated in the study, the total number in each group was unequal (arm 1: n=153, arm 2: n=148, and arm 3: n=164). The trial author was asked if there was a reason for the anomaly, but was not able to give an answer. Unequal numbers in group allocations may imply problems in the randomised sequence generation/recruitment process

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	Not stated
Allocation concealment (selection bias)	Unclear risk	Not stated
Blinding (performance bias and detection bias) All outcomes	High risk	Participants: impossible People who conducted the outcome assessment: unclear
Incomplete outcome data (attrition bias) All outcomes	Low risk	Details of attrition and exclusions from the analysis provided
Selective reporting (reporting bias)	High risk	Only the GSI data and an economic analysis were reported The results for the self-efficacy scale were not reported.
Other bias	High risk	Unequal numbers in each randomised group before exclusions. This may indicate a problem in randomisation process

Mohide 1996 (*Continued*)

		The lack of any statistical difference between groups indicate that the sample was severely underpowered
Other quality indicators	Unclear risk	Unclear who obtained the informed consent. Unclear if ethical clearance was obtained. No dates given for data collection.

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Aranda 2011	Did not evaluate orientation strategies.
Campbell 2010	Did not evaluate orientation strategies; non-randomised controlled trial: descriptive study
Carey 2007	This study is not an experimental study.
Deshler 2006	This trial did not report on any outcome of interest for this review
Dubois 2008	Non-randomised controlled trial: qualitative study.
Gallant 2003	Non-randomised controlled trials: descriptive study.
Hutchison 2007	Non-randomised controlled trials: descriptive paper.
Jones 1999	Did not evaluate orientation strategies.
Lis 2009	Non-randomised controlled trials: review paper.
Loiselle 2009	Did not evaluate orientation strategies.
Nissim 2009	Non-randomised controlled trials: qualitative study.
Parsonnet 1990	Non-randomised controlled trials: descriptive paper.
Rainey 1985	Non-randomised controlled trial.
Schofield 2008	Did not evaluate orientation strategies.
Sheldon 2008	Non-randomised clinical trial: review paper
Skalla 2004	Non-randomised controlled trial: qualitative study.

(*Continued*)

Wells 1995	There is a potential overlap of participants between Wells 1995 and McQuellon 1998. Despite email correspondence with the trialists, this issue was not clarified Patients were not treated equally. Apart from the intervention, those in the intervention group also received 15 to 20 minutes more time with a counsellor, so it was unclear which intervention was effective (counselling or orientation program)

DATA AND ANALYSES

Comparison 1. Interventions to increase knowledge compared with control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Radiation knowledge	1	51	Mean Difference (IV, Fixed, 95% CI)	-0.18 [-1.02, 0.66]

Comparison 2. Interventions to reduce anxiety compared with control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 State Anxiety (STAI-S)	2	188	Mean Difference (IV, Random, 95% CI)	-9.77 [-24.96, 5.41]
2 Trait Anxiety (STAI-T)	1	110	Mean Difference (IV, Fixed, 95% CI)	-4.70 [-8.37, -1.03]
3 Brief Symptom Inventory (BSI) - Anxiety	1	204	Mean Difference (IV, Fixed, 95% CI)	-0.20 [-3.07, 2.67]

Comparison 3. Interventions to reduce distress compared with control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Profile of Mood State - Total Mood Disturbance	2	188	Mean Difference (IV, Fixed, 95% CI)	-8.96 [-11.79, -6.13]
2 Emotional distress (General Severity Index)	1	204	Mean Difference (IV, Fixed, 95% CI)	0.20 [-2.34, 2.74]

Comparison 4. Interventions to reduce depression compared with control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Brief Symptom Inventory (BSI) - Depression	1	200	Mean Difference (IV, Fixed, 95% CI)	-0.40 [-2.95, 2.15]

Analysis 1.1. Comparison 1 Interventions to increase knowledge compared with control, Outcome 1 Radiation knowledge.

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 1 Interventions to increase knowledge compared with control

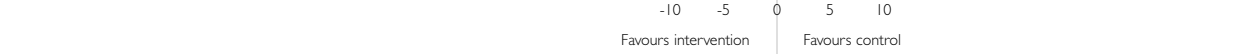
Outcome: 1 Radiation knowledge

Study or subgroup	Experimental N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Hoff 2005	29	8 (1.63)	22	8.18 (1.44)		100.0 %	-0.18 [-1.02, 0.66]
Total (95% CI)	**29**		**22**			**100.0 %**	**-0.18 [-1.02, 0.66]**

Heterogeneity: not applicable

Test for overall effect: Z = 0.42 (P = 0.68)

Test for subgroup differences: Not applicable



Analysis 2.1. Comparison 2 Interventions to reduce anxiety compared with control, Outcome 1 State Anxiety (STAI-S).

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 2 Interventions to reduce anxiety compared with control

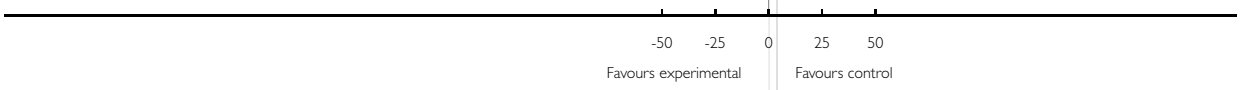
Outcome: 1 State Anxiety (STAI-S)

Study or subgroup	Intervention N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
Hoff 2005	29	34.76 (13.93)	22	36.45 (13.44)		47.9 %	-1.69 [-9.26, 5.88]
McQuellon 1998	66	33.2 (9.8)	71	50.4 (15.2)		52.1 %	-17.20 [-21.45, -12.95]
Total (95% CI)	**95**		**93**			**100.0 %**	**-9.77 [-24.96, 5.41]**

Heterogeneity: $Tau^2 = 110.47$; $Chi^2 = 12.27$, df = 1 (P = 0.00046); $I^2 = 92\%$

Test for overall effect: Z = 1.26 (P = 0.21)

Test for subgroup differences: Not applicable



Analysis 2.2. Comparison 2 Interventions to reduce anxiety compared with control, Outcome 2 Trait Anxiety (STAI-T).

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 2 Interventions to reduce anxiety compared with control

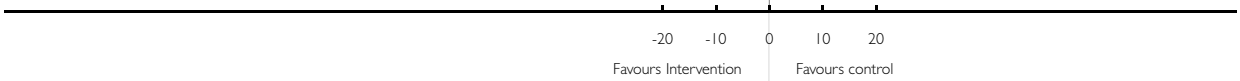
Outcome: 2 Trait Anxiety (STAI-T)

Study or subgroup	Intervention N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
McQuellon 1998	55	30.9 (8.7)	55	35.6 (10.8)		100.0 %	-4.70 [-8.37, -1.03]
Total (95% CI)	**55**		**55**			**100.0 %**	**-4.70 [-8.37, -1.03]**

Heterogeneity: not applicable

Test for overall effect: Z = 2.51 (P = 0.012)

Test for subgroup differences: Not applicable



Analysis 2.3. Comparison 2 Interventions to reduce anxiety compared with control, Outcome 3 Brief Symptom Inventory (BSI) - Anxiety.

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 2 Interventions to reduce anxiety compared with control

Outcome: 3 Brief Symptom Inventory (BSI) - Anxiety

Study or subgroup	Intervention N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Mohide 1996	102	54.7 (10.2)	102	54.9 (10.7)		100.0 %	-0.20 [-3.07, 2.67]
Total (95% CI)	**102**		**102**			**100.0 %**	**-0.20 [-3.07, 2.67]**

Heterogeneity: not applicable

Test for overall effect: Z = 0.14 (P = 0.89)

Test for subgroup differences: Not applicable

Analysis 3.1. Comparison 3 Interventions to reduce distress compared with control, Outcome 1 Profile of Mood State - Total Mood Disturbance.

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 3 Interventions to reduce distress compared with control

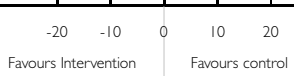
Outcome: 1 Profile of Mood State - Total Mood Disturbance

Study or subgroup	Intervention N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Hoff 2005	29	16.55 (20.02)	22	19.73 (22.82)		5.5 %	-3.18 [-15.18, 8.82]
McQuellon 1998	66	6.2 (7.1)	71	15.5 (10.1)		94.5 %	-9.30 [-12.21, -6.39]
Total (95% CI)	**95**		**93**			**100.0 %**	**-8.96 [-11.79, -6.13]**

Heterogeneity: Chi^2 = 0.94, df = 1 (P = 0.33); I^2 =0.0%

Test for overall effect: Z = 6.22 (P < 0.00001)

Test for subgroup differences: Not applicable



Analysis 3.2. Comparison 3 Interventions to reduce distress compared with control, Outcome 2 Emotional distress (General Severity Index).

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 3 Interventions to reduce distress compared with control

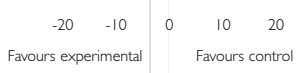
Outcome: 2 Emotional distress (General Severity Index)

Study or subgroup	Experimental N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Mohide 1996	102	53.8 (8.3)	102	53.6 (10.1)		100.0 %	0.20 [-2.34, 2.74]
Total (95% CI)	**102**		**102**			**100.0 %**	**0.20 [-2.34, 2.74]**

Heterogeneity: not applicable

Test for overall effect: Z = 0.15 (P = 0.88)

Test for subgroup differences: Not applicable

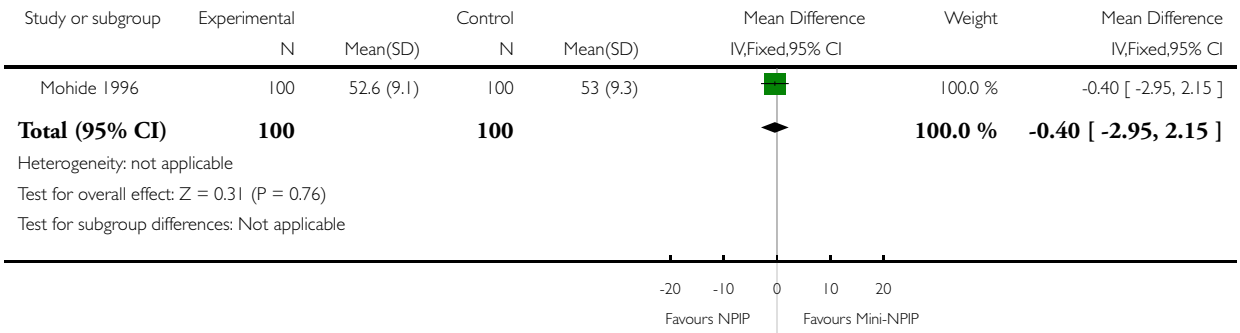


Analysis 4.1. Comparison 4 Interventions to reduce depression compared with control, Outcome 1 Brief Symptom Inventory (BSI) - Depression.

Review: Information interventions for orienting patients and their carers to cancer care facilities

Comparison: 4 Interventions to reduce depression compared with control

Outcome: 1 Brief Symptom Inventory (BSI) - Depression



ADDITIONAL TABLES

Table 1. Components, modes and delivery methods of orientation interventions in the included studies

Study	Components								Mode		Delivery method	
	Information of healthcare team (e.g. roles, contact numbers)	*Clinic tour*	*Information of the facility (e.g. map, parking, opening hours)*	*Description of clinical procedures*	*Information of supportive services*	*Resources available after treatment*	*Question and answer session*	Treatment related information (e.g. coping strategies, understanding chemotherapy/ radiotherapy)	*Audiovisual*	*Written materials*	*Mail*	*Face to face*
Burish 1991		√		√			√	√	√	√		√

Table 1. Components, modes and delivery methods of orientation interventions in the included studies (*Continued*)

Hoff 2005	√	√	√			√	√	√		√		√
Mohide 1996	√		√		√					√	√	
McQuellon 1998	√	√	√	√	√		√			√		√

A tick in the appropriate boxes represents the components, modes and delivery methods used.

APPENDICES

Appendix 1. CENTRAL search strategy

1. MeSH descriptor Neoplasms explode all trees
2. (cancer* or oncolog* or neoplasm or carcinom* or tumo*r or malignan* or chemotherapy or radiotherapy or radiation-therapy):ti,ab,kw
3. (leuk*emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*):ti,ab,kw
4. MeSH descriptor Cancer Care Facilities, this term only
5. (#1 OR #2 OR #3 OR #4)
6. ((patient or client or provid* or provision-of or supplying or supplied) next (information or education)):ti,ab,kw
7. MeSH descriptor Teaching Materials explode all trees
8. teaching:kw
9. (audio* or video* or cassette* or tape* or dvd or compact-dis* or cd or cds or multimedia or multi-media):ti,ab,kw
10. (internet or web or website or online or on-line or blog* or weblog or podcast* or computer-program* or computer-mediated or computer-based or computer-assisted or electronic-mail or email* or mail*):ti,ab,kw
11. (communication or counsel*):kw,ti
12. MeSH descriptor Telecommunications explode all trees
13. (telephon* or phone or text-messag* or sms):ti,ab,kw
14. (pamphlet or booklet or leaflet or flyer or poster or brochure or print*-material* or written-material):ti,ab,kw
15. ((education* or teaching or instruction* or counsel*ing or advisory or information*) next (material or program or session)):ti,ab,kw
16. (information next (service or dissemination)):ti,ab,kw
17. (#6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16)
18. (service or facilit* or center or centre or hospital or clinic or department or unit or therap* or treatment or staff or personnel or team):ti,ab,kw
19. (#17 AND #18)
20. ((educat* or inform* or advis* or advice or counsel* or orient* or tour* or introduc* or familiar* or descri*) near/3 (service or facilit* or center or centre or hospital or clinic or department or unit or therap* or treatment or staff or personnel or team)):ti,ab
21. (orientation* or familiari*):ti,ab,kw

22. (#19 OR #20 OR #21)
23. (#5 AND #22)

Appendix 2. MEDLINE (Ovid) search strategy

1. exp neoplasms/
2. (cancer* or oncolog* or neoplasm* or carcinom* or tumo?r* or malignan* or chemotherapy or radiotherapy or radiation therapy).tw.
3. (leuk?emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*).tw.
4. cancer care facilities/
5. oncology service hospital/
6. exp medical oncology/
7. oncologic nursing/
8. or/1-7
9. patient education as topic/
10. ((patient or client or providing or provision of or supplying or supplied) adj (education or information)).tw.
11. exp teaching materials/
12. (audio* or video* or cassette* or tape? or dvd* or compact dis* or cd or cds or multimedia or multi media).tw.
13. exp internet/
14. exp telecommunications/
15. (internet or web or website* or online or on line or electronic mail* or email* or mail* or blog* or weblog* or podcast* or portal? or computer program* or computer mediated or computer based or computer assisted).tw.
16. computer assisted instruction/
17. (telephon* or phone or phones or text messag* or sms).tw.
18. (pamphlet* or booklet* or leaflet* or flyer* or poster* or brochure* or print* material*).tw.
19. ((education* or teaching or instruction* or counsel?ing or advisory or information*) adj (material* or program* or session*)).tw.
20. communication/ or counseling/
21. information services/
22. information dissemination/
23. or/9-22
24. (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team).tw.
25. 23 and 24
26. ((educat* or inform* or advis* or advice or counsel* or orient* or tour* or introduc* or familiar* or descri*) adj3 (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team)).tw.
27. (orientation* or familiari*).tw.
28. or/25-27
29. 8 and 28
30. randomized controlled trial.pt.
31. controlled clinical trial.pt.
32. randomized.ab.
33. placebo.ab.
34. clinical trials as topic.sh.
35. randomly.ab.
36. trial.ti.
37. or/30-36
38. exp animals/ not humans.sh.
39. 37 not 38
40. 29 and 39

Appendix 3. EMBASE search strategy

1. exp neoplasm/
2. (cancer* or oncolog* or neoplasm* or carcinom* or tumo?r* or malignan*).tw.
3. (leuk?emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*).tw.
4. cancer center/
5. oncology ward/
6. cancer patient/
7. exp oncology/
8. exp oncology nursing/
9. exp cancer therapy/
10. exp cancer surgery/
11. or/1-10
12. patient education/
13. patient information/
14. ((patient or client) adj (education or information)).tw.
15. exp mass communication/
16. (audio* or video* or cassette* or tape? or dvd* or compact dis* or cd or cds or multimedia or multi media).tw.
17. (internet or web or website* or online or on line or blog* or weblog* or podcast* or portal? or computer program* or computer mediated or computer based or computer assisted).tw.
18. (telephon* or phone or phones or text messag* or sms).tw.
19. (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material*).tw.
20. ((education* or teaching or instruction* or counseling or advisory or information*) adj (material* or pack* or program* or session* or guide*)).mp.
21. information service/
22. or/12-21
23. (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team).tw.
24. 22 and 23
25. ((educat* or inform* or advis* or advice or counsel* or orient* or tour* or introduc* or familiar* or descri*) adj3 (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team)).tw.
26. (orientation* or familiari*).tw.
27. or/24-26
28. 11 and 27
29. randomized controlled trial/
30. controlled clinical trial/
31. single blind procedure/ or double blind procedure/
32. crossover procedure/
33. random*.tw.
34. placebo*.tw.
35. ((singl* or doubl*) adj (blind* or mask*)).tw.
36. (crossover or cross over or factorial* or latin square).tw.
37. (assign* or allocat* or volunteer*).tw.
38. or/29-37
39. nonhuman/ not (human/ and nonhuman/)
40. 38 not 39
41. 28 and 40

Appendix 4. CINAHL search strategy

1. MH neoplasms+
2. TI (cancer* or oncolog* or neoplasm* or carcinom* or tumo?r* or malignan*) or AB (cancer* or oncolog* or neoplasm* or carcinom* or tumo?r* or malignan*)
3. TI (leuk?emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*) or AB (leuk?emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*)
4. MH oncologic care
5. MH cancer care facilities
6. MH oncology care units
7. MH oncology+
8. MH oncologic nursing+
9. MH cancer patients or MH cancer survivors
10. MW cancer
11. s1 or s2 or s3 or s4 or s5 or s6 or s7 or s8 or s9 or s10
12. MH patient education
13. MH preoperative education
14. MH information resources+
15. MH telecommunications+
16. TI (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media) or AB (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media)
17. TI (internet or web or website* or online or blog* or weblog* or podcast* or computer program* or computer mediated or computer based or computer assisted or electronic mail* or email* or mail*) or AB (internet or web or website* or online or blog* or weblog* or podcast* or portal? or computer program* or computer mediated or computer based or computer assisted or electronic mail* or email* or mail*)
18. MH computer assisted instruction
19. MH computers
20. MH computer systems+
21. MH telephone+
22. TI (telephon* or phone or phones or text messag* or sms) or AB (telephon* or phone or phones or text messag* or sms)
23. TI (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material* or written material*) or AB (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material* or written material*)
24. TI (education material* or teaching material* or instruction material* or information material* or advisory material* or counseling material* or education program* or teaching program* or instruction program* or information program* or advisory program* or counseling program* or education session* or teaching session* or instruction session* or information session* or advisory session* or counseling session*)
25. AB (education material* or teaching material* or instruction material* or information material* or advisory material* or counsel*ing material* or education program* or teaching program* or instruction program* or information program* or advisory program* or counsel*ing program* or education session* or teaching session* or instruction session* or information session* or advisory session* or counsel*ing session*)
26. MH mail+
27. MW information systems
28. MH information services +
29. s12 or s13 or s14 or s15 or s16 or s17 or s18 or s19 or s20 or s21 or s22 or s23 or s24 or s25 or s26 or s27 or s28
30. TI (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team) or AB (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team)
31. s29 and s30
32. TI ((educat* or inform* or advis* or advice or counsel* or orient* or tour* or introduc* or familiar* or descri*) and (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team))

33. TI (orientation* or familiari*) or AB (orientation* or familiari*)
34. s31 or s32 or s33
35. s11 and s34
36. randomi?ed controlled trial*
37. PT Clinical Trial
38. MH Clinical Trials+
39. MH Random Assignment
40. MH Placebos
41. MH Quantitative Studies
42. AB (random* or trial or groups or placebo*) or TI (random* or trial or groups or placebo*)
43. AB (singl* or doubl* or tripl* or trebl*) and AB (blind* or mask*)
44. TI (singl* or doubl* or tripl* or trebl*) and TI (blind* or mask*)
45. S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44
46. s35 and s45
47. s46 [exclude MEDLINE records]

Appendix 5. PsycINFO search strategy

1. exp neoplasms/
2. (cancer* or oncolog* or neoplasm* or carcinom* or tumo?r* or malignan*).ti,ab,hw,id.
3. (leuk?emi* or AML or lymphom* or hodgkin* or T-cell* or B-cell* or sarcom* or Ewing* or osteosarcom* or wilms* or nephroblastom* or neuroblastom* or rhabdomyosarcom* or teratom* or hepatom* or hepatoblastom* or medulloblastom* or PNET* or retinoblastom* or meningiom* or gliom*).ti,ab,hw,id.
4. oncology/
5. or/1-4
6. client education/
7. ((patient or client) adj (education or information)).ti,ab,id.
8. exp communications media/
9. exp communication systems/
10. exp electronic communication/
11. (audio* or video* or cassette* or tape? or dvd* or compact dis* or cd or cds or multimedia or multi media).ti,ab,id.
12. websites/
13. (internet or web or website* or online or on line or blog* or weblog* or podcast* or portal? or computer program* or computer mediated or computer based or computer assisted).ti,ab,id.
14. exp computer assisted instruction/
15. hot line services/
16. (telephon* or phone or phones or text messag* or sms).ti,ab,id.
17. (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material*).ti,ab,hw,id.
18. ((education* or teaching or instruction* or counseling or advisory or information*) adj (material* or pack* or program* or session* or guide*)).ti,ab,hw,id.
19. information services/
20. information/
21. or/6-20
22. (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team).ti,ab,id.
23. 21 and 22
24. ((educat* or inform* or advis* or advice or counsel* or orient* or tour* or introduc* or familiar* or descri*) adj3 (service* or facilit* or center* or centre* or hospital* or clinic or department* or unit or therap* or treatment* or staff* or personnel or team)).ti,ab,id.
25. (orientation* or familiari*).ti,ab,id.
26. or/23-25
27. 5 and 26
28. random*.ti,ab,hw,id.

29. trial*.ti,ab,hw,id.
30. control*.ti,ab,hw,id.
31. placebo*.ti,ab,hw,id.
32. ((singl* or doubl* or trebl* or tripl*) and (blind* or mask*)).ti,ab,hw,id.
33. (cross over or crossover or factorial* or latin square).ti,ab,hw,id.
34. (assign* or allocat* or volunteer*).ti,ab,hw,id.
35. treatment effectiveness evaluation/
36. mental health program evaluation/
37. exp experimental design/
38. "2000".md.
39. or/28-38
40. 27 and 39

Appendix 6. Data extraction sheet

The following main sets of data were extracted from each included study:

- lead author; date;
- study participant inclusion criteria;
- participants (participant diagnoses/condition(s), stage of diagnosis and demographics: race/ethnicity, gender, religion/culture, socioeconomic status, age);
- study design and timetable; randomisation; allocation concealment;
- interventions (content and format of interventions)
- intervention setting and delivery provider; delivery of any co-interventions, timing of intervention, the use of standardised protocols, training of the intervention provider, components of intervention, theoretical basis of intervention if stated;
- numbers of participants in each trial arm;
- outcome measures; time(s) at which outcomes assessed;
- results;
- potential biases;
- analysis;
- additional comments.

HISTORY

Protocol first published: Issue 1, 2010

Review first published: Issue 12, 2011

CONTRIBUTIONS OF AUTHORS

Writing the protocol: RC, JW

Developing the search strategy: RC

Searching for trials: RC

Selecting trials: RC, JW

Data entry: RC, JW

Analysis: RC, JW, LM

Interpreting analysis: RC, JW, LM

Drafting final review: RC, JW, LM

Updating the review: RC

DECLARATIONS OF INTEREST

None known

SOURCES OF SUPPORT

Internal sources

- Royal Brisbane and Women's Hospital (RBWH), Australia.

Royal Brisbane and Women's Hospital (RBWH) provided salary and facilities to RC and JW to conduct this systematic review.

- Queensland Institute of Medical Research (QIMR), Australia.

Queensland Institute of Medical Research (QIMR) provided salary and facilities to LM to conduct this systematic review.

External sources

- No sources of support supplied

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

Electronic searches

The protocol stated that the Current Contents ISI and Web of Science ISI would be searched, but we did not search these for the review. The review authors believe that it would not add further studies to the identified titles.

Authorship

The protocol stated that the decision to carry out meta-analyses were to be made by consensus of RC and JW. However, an additional author (LM) joined the review team at the review stage. Therefore, the decision to carry out meta-analyses were made by consensus of RC, JW and LM.

Measures of treatment effect

For individual trials, for dichotomous (binary) outcomes, we planned to report odds ratios (ORs) and 95% confidence intervals (CIs). For continuous outcomes with different scales of measurement across trials, we planned to report standardised mean differences (SMDs), each with its 95% CI. In this review, we did not report on any dichotomous outcomes or continuous outcomes with different scales of measurement across trials.

Data synthesis

If there were sufficient, appropriate studies, they were to have been categorised based on study design, type of intervention or whether the intervention was aimed at patients or carers. Within these categories, the results were to have been further structured to reflect the comparisons detailed in the Types of interventions sections (i.e. mode of delivery). We also planned to present separately the results of studies that compared the intervention to no intervention, then those that compared the intervention to other forms of orientation intervention (e.g. face to face versus audio/visual) and those that compared two or more types of mode (e.g. written materials and video; written material and face to face). However, we did not carry out these procedures due to insufficient studies/data.

If cluster randomised trials were included, we would have accounted for the effects of clustering by adjusting each trial to its 'effective sample size' using intra-class coefficients where available, or external estimates from similar studies. However, there were no cluster randomised trials identified in this review.

Unit of analysis issues

There were no unit of analysis issues.

Sensitivity analysis

We planned to restrict the primary analysis to studies which were considered as having a low risk of bias (i.e. those receiving a 'Yes' rating for the criteria of sequence generation and allocation concealment).
We planned to perform sensitivity analyses where appropriate in order to explore the influence of the following factors on effect size:
• excluding unpublished studies;
• excluding any large studies to establish how they impact on the results;
• excluding studies using the following filters: criteria used for clinical diagnosis and eligibility for intervention,
language of publication, country;
• the length of the interval between registration to the service and delivery of the intervention; and between delivery of the intervention and measurement of the effect.
We also planned to test the robustness of the results by repeating the analysis using different measures of effect size (risk difference, odds ratio etc.) and different statistical models (fixed-effect and random-effects models), as appropriate.
However, there were too few studies to perform these analyses.

Dealing with missing data

If some outcome data remained missing despite our attempts to obtain complete outcome data from authors, we would have performed an available-case analysis, based on the numbers of patients for whom outcome data were known. If standard deviations were missing, we would have imputed them from other studies, or where possible, computed them from standard errors using the formula SD=SE x $\sqrt{}$N, where these were available (Higgins 2008). We also planned to report on levels of drop outs in the intervention and comparison groups as an indicator of 'acceptability' of the intervention, and as a potential source of bias.

Assessment of reporting biases

Reporting bias was to have been assessed using guidelines in Cochrane Handbook for Systematic Reviews of Interventions (Higgins 2008). However, there were not enough studies available to do a meaningful assessment of publication bias.

NOTES

N/A